University at Buffalo
STATE UNIVERSITY OF NEW YORK

Department of Mathematics
UNDERGRADUATE STUDIES
244 MATHEMATICS BUILDING
UG PHONE: (716) 645-MATH, EXT 108

SAMPLE SYLLABUS

NOTE: This document is published only as an indication of what is typically taught in this course. Instructors have the responsibility of deciding on topics to be omitted, additional topics to be included, and the emphasis, ordering, and pacing of presentation of topics.

Course Number: **MTH 122**

Course Title: **Survey of Calculus and its Applications 2**

Credit Hours: **4.0**

Textbook(s): **Goldstein, Lay & Schneider, *Calculus and its Application*, (UB Custom 10th ed., or standard 10th ed.), Prentice Hall**

Description: ***(Continuation of MTH 121)*** **Maximization of functions of several variables using calculus, elementary integration, simple differential equations, probability.**

Prerequisite: **MTH 121 with recommended grade of *C* or higher.**

Syllabus: The schedule below includes 21 sections. In a 13 week term, even a class meeting only twice per week and proceeding at one section per meeting, should have adequate time for review and examinations.

Note: trig functions are not usually covered in MTH 121 and are not part of this syllabus for 122. Care should be taken in assigning problems in Chapter 9 and Chapter 10.

Week	*Section*	*Topic*
1 - 3	7.1 - 7.7 (omit 7.6)	Examples of Functions of Several Variables Partial Derivatives Maxima and Minima of Functions of Several Variables Lagrange Multipliers and Constrained Optimization The Method of Least Squares Double Integrals
4 - 6	9.1 - 9.6	Integration by Substitution Integration by Parts Evaluation of Definite Integrals Approximation of Definite Integrals Some Applications of the Integral Improper Integrals
7 - 10	10.1 - 10.7 (omit 10.3, 10.4)	Solutions of Differential Equations Separation of Variables Graphing solutions of Differential Equations Applications of Differential Equations Numerical Solution of Differential Equations
11 - 13	12.1 - 12.4	Discrete Random Variables Continuous Random Variables Expected Value and Variance Exponential and Normal Random Variables